EENS Job Risk Assessment

Name(s) of Risk Team Members: L. Bowerman, D. Elling, J. Johnson, R. Lofaro, A. Piper	**Point Value → Parameter ↓**	**1**	**2**	**3**	**4**	**5**
	Frequency (B)	**≤once/year**	**≤once/month**	**≤once/week**	**≤once/shift**	**>once/shift**
Job Title: Thermal Use of Ovens, Furnaces, etc. **Job Number or Job Identifier: EENS-JRA-024** **JRA Date:**	**Severity (C)**	**First Aid Only**	**Medical Treatment**	**Lost Time**	**Partial Disability**	**Death or Permanent Disability**
Job Description: Work with ovens, furnaces, dryers, hot plates, heat treating (annealing), convection ovens, and other equipment/processes with thermal hazards Training and Procedure List (Optional): **Approved by:** **Date:** 5/15/06 **Rev. #:** Draft	**Likelihood (D)**	**Extremely Unlikely**	**Unlikely**	**Possible**	**Probable**	**Multiple**
Stressors (if applicable, please list all): none		**Reason for Revision (if applicable):**			**Comments:**	

				Before Additional Controls							**After Additional Controls**					
Job Step / Task	**Hazard**	**Control(s)**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Control(s) Added to Reduce Risk**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**% Risk Reduction**
Routine chemical use		See EENS-JRA-009	N	1												
Use of compressed gases cylinders		See EENS-JRA-001	N	1												
Use of pressurized systems		See EENS-JRA for pressurized systems (in development)	N	1												

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Use of hot converters to measure species in atmosphere	Burns from contact with hot surface	ESR, work planning, labeling, appropriate PPE, postings	N	1												
Operating ovens, furnaces, convection ovens, and other thermal equipment	Burns from contact	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections, High limit control	N	1	5	2	3	30								
	Electrical shock from faulty equipment	Disconnect power when servicing, basic electrical safety training, inspection of equipment, equipment design, appropriate PPE, ESR, work planning, housekeeping, Tier 1 inspections	N	1	5	4	1	20								
	Reflex “jerk” injury from burn or shock	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections, High limit control	N	1	5	2	3	30								

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Use of bench top hot plates and stirrers	Burns from contact	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections, High limit control	N	1												
	Electrical shock from faulty equipment	Disconnect power when servicing, basic electrical safety training, inspection of equipment, equipment design, appropriate PPE, ESR, work planning, housekeeping, Tier 1 inspections	N	1												
	Reflex “jerk” injury from burn or shock	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections, High limit control	N	1												

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	Fracture of glassware resulting in lacerations or burns	Visual inspection of glassware, appropriate PPE (e.g.: safety glasses, gloves), ESR, work planning, housekeeping, appropriate tools (e.g.: tongs, etc.), Tier 1 inspections	N	1												
Use of laboratory fabricated heating elements (heat tapes, immersion heaters, etc.)	Burns from contact	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections	N	1												
	Electrical shock from faulty equipment	Disconnect power when servicing, basic electrical safety training, inspection of equipment, equipment design, appropriate PPE, ESR, work planning, housekeeping, Tier 1 inspections	N	1					High limit control							

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	Reflex “jerk” injury from burn or shock	Equipment design, insulation, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, and gloves), postings, ESR, work planning, housekeeping, Tier 1 inspections	N	1												
Use of arc furnace	Eye injury from intense light – arc flash	Equipment design, ESR, work planning, appropriate PPE	N	1												
Attaching or modifying wiring, thermocouples, sensors or control circuits to furnaces or other equipment	Burns from contact	Equipment cooled prior to work, gloves, insulation, PPE, postings, work planning, housekeeping	N	1												
	Electrical shock	Disconnecting power prior to servicing; training, insulation, PPE, basic electrical safety training	N	1												
	Reflex “jerk” injury from burn or shock	Equipment cooled prior to work, gloves, insulation, PPE, postings, work planning, housekeeping Disconnecting power prior to servicing, basic electrical safety training	N	1												

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Removing samples or equipment that has been heated	Breaking of the equipment by rapid pressure or temperature change	Insulation, allowing item to cool prior to handling, appropriate tools (e.g.: tongs, etc.), appropriate PPE (e.g.: aprons, safety glasses, gloves, etc.), instrument design, programmable controls, work planning, ESR	N	1												
Further Description of Controls Added to Reduce Risk:																

***Risk:**	**0 to 20 Negligible**	**21 to 40 Acceptable**	**41 to 60 Moderate**	**61 to 80 Substantial**	**81 or greater Intolerable**